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Pen Ball/Palm Pen Holder
OPENSCAD CUSTOM SIZING GUIDE

Overview

To create custom Pen Ball or Palm Pen Holder sizing OpenSCAD is an excellent and easy to use tool to create STLS within minutes. If a user requires a alternate size of device to fit a specific need this tool can be used to adapt the current small, medium, and large sizes,

Creating Custom Sized Assistive Tech:

Step 1: Downloading OpenSCAD

- The download link for OpenSCAD can be found here: https://openscad.org/downloads.html
- The software is free and available on Windows, MacOS, and Linux

Step 2: Open the OpenSCAD File

- Once OpenSCAD is downloaded, locate the “Palm_Pen_Custom_Sizing.scad” or the “Pen_Ball_Custom_Sizing.scad” file (depending on the device you are trying to edit) on the GitHub page and double click it to open the file in OpenSCAD.
- Ensure to download the second file that will be in the same folder with the “.json” file type. This must be downloaded in the same place as the “.scad” file. This will never need to be opened but contains all the preset custom sizings.

Step 3: Finding Current Standard Sizing

- Each device size (small, medium, or large) has a option of also having a small, medium, or large pen hole size. This creates 9 different options for the device sizing.
- The STL’s for these sizes have already been made and can be found on the project pages GitHub
- If you want to view the sizing in more detail on OpenSCAD you can look to the top right of the screen to see the customizer “presets” seen below.
- The naming convention of the presets are “x w y Device Name” where x and y are the device size and the pen hole size respectively and w stands for “with”. So for example one preset could be “medium w large pen hole”
- After selecting one of the presets give the software a moment to reload the new dimensions, to see the dimensions click the “parameter” button below

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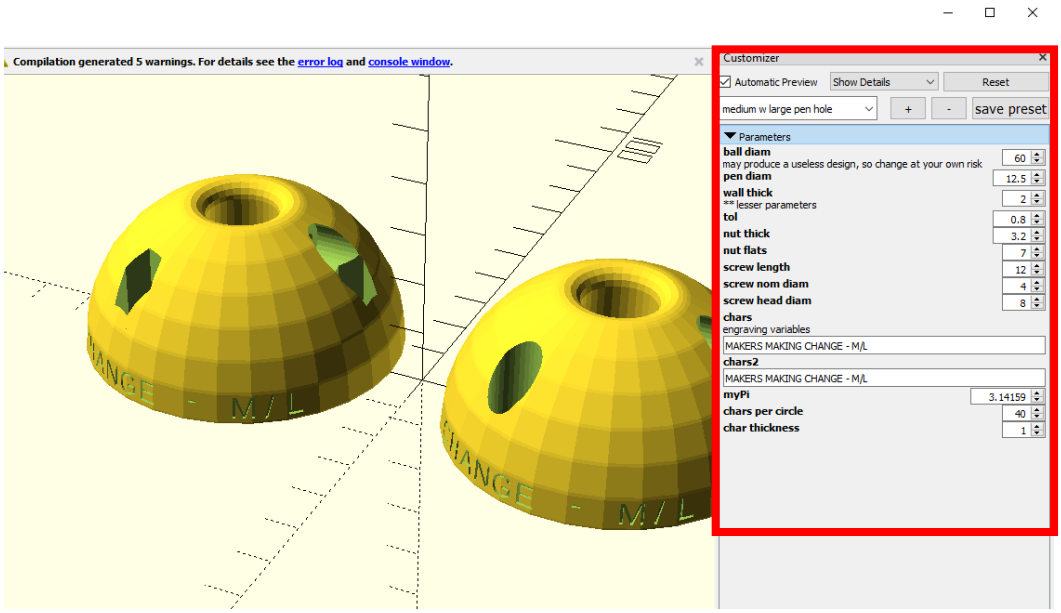

Step 4: Customizing Standard Sizing

- Pick the preset you want to change the dimensions of
- Open the parameters tab and edit the dimensions to suit the needs of the user of the device
- Be careful that changing the dimensions outside the ranges of small, medium, and large may result in a part that does not print well so make sure that when the parts are changed the device will still work as intended when it is printed

Step 5: Creating the 3D Printable Braille Model

- Once step 4 is complete and you are happy with the model you have created, click on the "**Preview**" button at the top of the text pane to view your model. This looks like a cube with two arrows going to the right.

- If everything looks correct and the model loads without error, click the "**Render**" button to prepare your model. If you're not ready, make the necessary edits and then hit "Preview" again.

- After rendering the model, you're ready to export the file. Click on the "**Export as STL**" button and save the file. This file can now be used to 3D print. Please see 3D Printing Guide document for tips on printing Braille.